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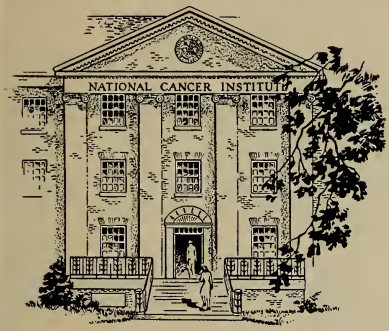

The U. S. Fights CANCER

THE CANCER PROGRAM OF THE NATIONAL CANCER INSTITUTE

THE NATIONAL INSTITUTE OF HEALTH
U. S. PUBLIC HEALTH SERVICE
BETHESDA, MARYLAND

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THE PUBLIC HEALTH SERVICE ACT

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled . . .
SEC. 401. The National Cancer Institute shall be a division in the National Institute of Health.
SEC. 402. . . . with respect to cancer the Surgeon General, through the National Cancer Institute and in cooperation with the National Advisory Cancer Council, shall—

(a) conduct, assist, and foster researches, investigations, experiments, and studies relating to the cause, prevention, and methods of diagnosis and treatment of cancer;

(b) promote the coordination of researches conducted by the Institute and similar researches conducted by other agencies, organizations, and individuals;

(c) provide training and instruction in technical matters relating to the diagnosis and treatment of cancer;

(d) provide fellowships in the Institute from funds appropriated or donated for such purpose;

(e) secure for the Institute consultation services and advice of cancer experts from the United States and abroad;

(f) cooperate with State health agencies in the prevention, control, and eradication of cancer;

(g) procure, use, and lend radium as provided in section 403.

Excerpt from
Title IV, Public Law 410
78th Congress, July, 1944

The National Cancer Institute

Director—Dr. Leonard A. Scheele

Scientific Research
Dr. Harry Eagle

Cancer Research Grants
Dr. David E. Price

Cancer Control
Dr. Austin V. Deibert

THE CANCER PROGRAM
OF THE
NATIONAL CANCER INSTITUTE

JUL 5 '50

Pamphlet
RC261
.U52

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U. S. Fights Cancer

BECAUSE cancer has advanced in the last 25 years from seventh to second* place as a cause of death in the United States, our Congress has authorized a broad and intensive campaign to fight it. Paradoxically, the scientific discoveries, medical advances and public health measures that have made it possible for more Americans to live longer have also made it probable that more Americans will die of cancer. It is in the middle and late years of life that cancer takes its greatest toll.

Babies born in the United States today have a life expectancy of 66 years. With this gift of longevity goes a penalty: 20 percent of the boys and 22 percent of the girls, it is estimated, will have cancer sometime in their lives. How many die of it depends upon whether some better means of prevention, diagnosis or cure is found, or failing that, whether the cancer is detected early enough for successful treatment by the three present-day accepted methods—surgery, x-ray or radium.

Upon these two alternatives, the U. S. cancer program is based. Its long-range aim is to find the cause and some more adequate method of prevention or cure; its immediate aim is to cut the death toll by stimulating early diagnosis and treatment. This is the working pattern for the National Cancer Institute of the U. S. Public Health Service, the agency that spearheads the fight against cancer by the United States Government.

The present U. S. cancer program was launched in 1937 by the National Cancer Institute Act. This placed the National Cancer Institute in the U. S. Public Health Service, and created the National Advisory Cancer Council to advise it. The provisions of this Act, which outline the basic features of the program as it operates today, were re-enacted in 1944 as part of the Public Health Service Act (see extract from Act on inside front cover).

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* Second only to heart disease.

HISTORY

Primarily a research organization, the National Cancer Institute operates as a division of the National Institute of Health, which is the principal research arm of the Public Health Service. The National Institute of Health has made many notable contributions to medical knowledge, such as finding the carrier and a vaccine for Rocky Mountain spotted fever, discovering the cause of pellagra and the carrier for endemic typhus.

The Institute of Health engaged in cancer research on a small scale even before a separate cancer program was voted by Congress. In the mid-twenties, under government sponsorship, two groups of scientists—one at Harvard Medical School under Dr. J. W. Schereschewsky and the other in the Public Health Service's Hygienic Laboratory in Washington under Dr. Carl Voegtlin—conducted research in cancer. Their experience gave the government a trained nucleus of about ten cancer research scientists around whom the new National Cancer Institute was built. Dr. Voegtlin became the first chief of the Institute in 1937.

In the meantime, cancer research in universities, hospitals and other institutions was underway on a limited scale, but was hampered by lack of funds. When established in 1937, the Institute was empowered to assist these scattered efforts, and to conduct its own laboratory and clinical research. The program began in 1938.

Late in 1939 the Institute moved into a well equipped laboratory and administration building constructed at a cost of $750,000 on a special plot of land donated by the late Luke I. Wilson near Bethesda, Maryland. About 10 miles from the center of Washington, D. C., the four-story National Cancer Institute building is now part of a rapidly growing medical center which includes on its own side of U. S. Route 240, the National Institute of Health's other research buildings, and across the road the white skyscraper U. S. Naval Hospital and Medical Center.

The U. S. cancer program had only four years to get organized before war came to disrupt all but primarily military research in medicine. During these unsettled years, and afterwards, the Institute was directed by Dr. R. R. Spencer—outstanding in the Public Health Service for his contributions in medical research. After V-J Day, the nation was free once more to train its sights on a disease that during the war had killed twice as many (more than 600,000) of its citizens as had the enemy.

Our spectacular wartime progress in research, especially that leading to the atomic bomb, encouraged popular hope that soon even cancer, that ancient foe, might be conquered—if enough money could be spent.

BUDGET AND ORGANIZATION

The original Cancer Act placed a $700,000 annual ceiling on cancer appropriations. This was removed before the end of the war and Congress increased research funds from $490,000 for 1946 (fiscal) to $1,772,000 for 1947. At the same time, and for the first time, special appropriations were made to be spent by the States on "cancer control" programs chiefly concerned with educating the medical profession and the public to make better and earlier use of existing knowledge about treatment and diagnosis. Until 1947 this work had been handled almost entirely by a voluntary health organization, the American Society for the Control of Cancer (now the American Cancer Society).

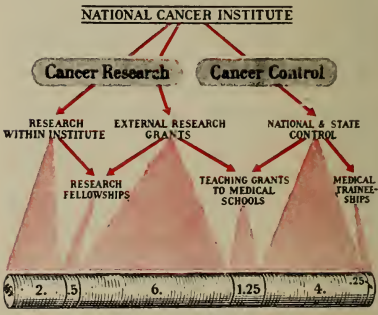
For 1948, cancer appropriations have been raised to $14,000,000. About a third of this will go into cancer control, the rest into research. The Institute will be able to expand its laboratory research, its clinical research—the valuable study of actual cancer cases—and its training program for research scientists and clinicians, without whom neither laboratory nor clinical study can go very far. The bulk of new funds, however, will be spent on research outside the Institute, and to inaugurate an expanded training program for scientists and clinicians.

Deciding what to emphasize in the government

cancer program is the responsibility of the National Advisory Cancer Council. Composed of six leading experts, each of whom serves a three-year term, and with the Surgeon General as ex-officio chairman, the Council advises on Institute policy and directs the expenditure of grants-in-aid for research.

An important part of the Council's work is done by committees of leading scientists and physicians who meet periodically to determine research needs and evaluate progress in specific problems. One of the most active groups is the Committee on Gastric Cancer, which has contributed much to the understanding of a type of cancer that causes nearly half of cancer deaths. Reports of its national conferences have been published in three special issues of the *Journal of the National Cancer Institute* (February 1941, April 1945, and April 1947).

The National Cancer Institute's own activities are of two main types—research and cancer control. For administrative purposes, however, the organization divides its work into three categories: scientific research within the Institute, research grants to outside institutions, and the supervision of grants to States for cancer control programs.



Breakdown in millions of dollars.
1948 total appropriation, $14,000,000.

Research

MONEY and good intentions alone cannot insure the early discovery of a cure for cancer. Cancer is as mysterious as life itself. To learn why and how it starts, how it grows and what will stop it, scientists may have to uncover the secret of growth in the individual cell. Very little basic knowledge exists about the laws governing this smallest organized unit of living matter.

In the field of atomic research, where the stupendous outcome of five highly expensive years created such popular faith in the power of money to solve the riddles of science, there existed a great body of mathematically exact knowledge before the Manhattan Project was started. All that was necessary to put this knowledge to use was a supply of equipment, personnel and facilities on a scale vaster than could ever be attained by an ordinary research group, and a unity of purpose that is seldom achieved without the fears and fervors of war psychology.

The pre-bomb discoveries and hypotheses about the atom were made over a long period of years—by the Curies in France and Einstein in Switzerland, by Rutherford in England and Fermi in Italy, by Bohr in Denmark and Urey in the United States. In the end it was all this research and more linked together that produced the bomb. It may take as many or even more years of investigation into obscure phases of biology, before the cause, prevention or cure of cancer is found. At the same time, such a broadly based search will unquestionably contribute information about other diseases that will be of inestimable value, to say nothing of the very basic questions about life itself that may be answered in the process.

This is the pattern of all research. Progress in far less complicated fields than cancer is often exasperatingly slow. Only two percent of the large sums spent on industrial research in the United States produces practical results, but this very small percentage more than pays for all the rest.

NCI'S RESEARCH PROGRAM

The National Cancer Institute conducts original research of its own and finances private research through grants-in-aid; regularly publishes latest findings for scientists and physicians in its *Journal;* and attempts to enlarge the slim supply of qualified research specialists by financing promising young scientists in intensive cancer study.

One of the world's largest facilities and staffs—more than 250 scientists, technicians and attendants—for laboratory research in cancer is that of the Institute in Bethesda, Maryland. There, experiments are being carried out through several research sections, and there are cooperative projects between sections. In addition the work of the individual scientists is coordinated through weekly staff meetings, and at sessions between section chiefs and the scientific director of the Institute.

In *biology*, cancer is studied in animals in an effort to throw light on the behavior of the disease in man. *Endocrinology* explores the role of hormones in the causation of cancer and evaluates several forms of hormonal treatment for cancer of the breast, prostate and uterus. *Biophysics* utilizes physical agents and methods, such as radioactive isotopes, X-rays, electron microscopes, and high speed ultra-centrifuges in the study of cancer.

The purpose of *biochemistry* is to find what chemical substances are present in cancer and whether they differ from chemicals found in normal organs, and to discover what chemical reactions cause cancer to grow continuously. In *chemotherapy* there is systematic search for chemical agents that might lead to the development of a chemical treatment of one or more types of cancer in human patients. Cancer *pathology* is primarily concerned with the study of the changes that take place in cell tissue as it becomes malignant, and the effect this has on other organs.

A primary aid both to research and cancer control is statistical information to show how

many people have cancer and at what ages; how many recover and how many die; where they live and what they do; what types and ages are most subject to certain kinds of cancer, etc. This not only enables the Institute to chart the increase or decline of cancer, but also gives valuable indications as to danger spots in the population.

The Institute's study of cancer in human beings is carried on in certain hospitals that serve as clinical research laboratories. First to be used was the Tumor Clinic of the U. S. Marine Hospital in Baltimore, Maryland where all actual and suspected cancer cases among merchant marine personnel and other Public Health Service beneficiaries east of the Mississippi may go for diagnosis and treatment.

Specialized clinical research is conducted at several other hospitals, including Children's Hospital in Boston, Laguna Honda Home, associated with the University of California Medical School, and Garfield Hospital in Washington, D. C. The new appropriations will enable the Institute to develop clinical research facilities at headquarters in Bethesda and perhaps elsewhere.

RESEARCH GRANTS-IN-AID

By far the major part of the Institute's research expenditures goes into grants-in-aid for research in universities, hospitals, and other types of institutions. Since 1938, when the first grants were made, 68 different research agencies or individuals working in 25 states have received grants totaling $1,809,858. The appropriations for 1948 will enable the Institute to give more than three times this much to outside groups in one year.

Until this year, grants were made only for specific projects that had to be outlined in some detail as to material, time, personnel and funds. A new policy gives research institutions greater leeway in determining their own activities and allows the Institute to make a few institutional grants of a general nature. This gives scientists greater leeway in following research leads, and

also makes possible the coordination of many phases of cancer research in one institution.

One of the most serious deterrents to cancer research has been the lack of assured long-range support for projects. This year, for the first time, through the foresight of Congress in providing funds for cancer research and education, grants can be given to research groups for at least two years ahead.

Another innovation makes it possible to give funds for the acquisition of land and the construction of laboratories and clinical research facilities where urgently needed. Eventually this might lead to the development of a small number of large cancer research centers in various parts of the United States. It is hoped, also, that increased assistance can be given to support research beds and clinical research.

RESEARCH FELLOWSHIPS

More trained scientists are needed before cancer research can become the all-out effort the country demands. One of the first steps in this direction was the granting in 1938 of 20 research fellowships by the Institute. Most of the first recipients later became permanent members of the Institute staff. The fellowships, which have been continued, enable scientists to do special work in a cancer hospital, laboratory or at the Institute itself in preparation for full-time occupation in cancer research. More than 100 fellowships had been completed by July, 1947. Ninety-five more were given for 1948 (fiscal), and 100 will be available annually under the expanded program.

Cancer research fellowships provide for one year of study and are renewable. They are awarded to promising research scientists from this country or abroad. There are junior fellowships for holders of AB, BS and Masters degrees; senior fellowships for holders of doctorate degrees, and special research fellowships for very distinguished scientists. Application should be made to the National Institute of Health, Bethesda, Maryland.

The research scientist has to know what others are accomplishing if he is to do his own work with the least waste effort. To help make this possible, the Institute publishes its findings in an official bimonthly publication, *Journal of the National Cancer Institute.* Occasionally, accounts of outside research and articles of general scientific interest * are published, or a whole issue is devoted to a special conference of one of the committees of the National Advisory Cancer Council. Several issues have been concerned with conferences on gastric cancer, for example.

One thousand copies of the Journal go free to research scientists, to medical and other scientific libraries. Others interested in the technical subject matter of most *Journal* articles may subscribe for $2 a year by writing to the Superintendent of Documents, Government Printing Office, Washington, D. C. Single copies cost 40c each.

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* EXAMPLES:

"Federal Cancer Control Program" by Carl Voegtlin—August, 1940, Vol. 1, No. 1.

"Approaches to Cancer Research," by R. R. Spencer and Carl Voegtlin—*ibid.*

"Sunlight and Cancer of the Skin," by Harold F. Blum—December, 1940, Vol. 1, No. 3.

"Possibilities of Improved Therapy for Cancer Patients," by Carl Voegtlin—April, 1941, Vol. 1, No. 5.

"Survey of Radiation Protection in Hospitals," by Dean B. Cowie and Leonard A. Scheele—June, 1941, Vol. 1, No. 6.

"Administration of the National Cancer Institute Act," by Ora Marshino—April, 1944, Vol. 4, No. 5.

"Incidence of Leukemia in Physicians," by Paul S. Henshaw and James W. Hawkins—February, 1944, Vol. 4, No. 4.

"Organizational Structure and Activities of State Cancer Programs," by James W. Hawkins—*ibid.*

"Evaluation of Breast Cancer Therapy as a Guide to Control Programs," by James W. Hawkins—April, 1944, Vol. 4, No. 5.

"Research Activities of the National Cancer Institute," by Michael B. Shimkin—October, 1944, Vol. 5, No. 2.

"Cancer Facilities and Services," a report from the National Advisory Cancer Council—April, 1946, Vol. 6, No. 5.

Cancer Control

THE GOVERNMENT'S cancer program most directly reaches the individual citizen through the cancer control activities of his own State or community. Up to July, 1946, when Congress appropriated $2,500,000 for cancer grants to the States, the Public Health Service was able to assist these activities only through consultation and funds amounting to less than $250,000 a year.

Now most of the States are receiving greatly increased grants-in-aid for expansion of their cancer control programs. These grants, which differ from NCI's research grants (see page 9), are concerned primarily with diagnosis and treatment. They are made by the Cancer Control Subdivision of the Institute to the official agency in each State that is responsible for the cancer control program. This is usually the State Health Department. In 1948 (fiscal), $5,500,000 will be spent on cancer control.

Although the States must submit plans and budgets in order to receive grants, they are free to develop their programs according to local needs. Usually a program is developed in cooperation with the State Medical Society and the State Cancer Society. Statistical research into types, numbers and location of cancer cases is often basic to the planning.

The main aim of the control program is to reduce the number of cancer deaths by helping the nation's estimated 175,000 practicing physicians and their patients make the most effective use of what we already know about cancer.

Aid to the medical profession is given in three ways: through grants up to $25,000 each to medical schools for improving both the quality and quantity of their cancer education, through traineeships to young physicians at $10 per day for graduate clinical study in cancer, and through the production of educational materials.

MEDICAL SCHOOLS AND TRAINEES

To seek ways of improving undergraduate cancer education, the National Advisory Cancer

Council invited medical school deans, professors and others interested in medical education to a conference at the NCI in November, 1946. As a result of these proceedings, which appear in the August, 1947 issue of the Institute *Journal*, the Advisory Council recommended: that medical schools review their cancer teaching and consider adding additional concentrated courses, preferably in the senior year, in which the pathology, physiology and biochemistry of cancer are correlated with a weekly clinic devoted to cancer of various sites; that they undertake to encourage cancer research in medical schools as a stimulus to cancer teaching and student interest, and that ways be found to financially assist this program.

Scarcely was the ink dry on the 1948 Appropriation Act than the Institute implemented these recommendations by granting financial aid to two medical schools that plan to coordinate cancer teaching—Washington University in St. Louis, Missouri, and Yale University. More grants will be given as other schools make application.

The program to help medical schools improve cancer training is fairly new, but for several years the Institute has been providing traineeships to help graduate physicians take work leading to specialization in cancer: at present there are 77 doctors in training. Traineeships provide up to three years of full-time postgraduate work in a hospital with facilities for well rounded cancer training, including radiology, surgery and pathology. The trainee may select his own hospital, but must be acceptable to that hospital.

To be eligible, an applicant must be under 40 years of age, a graduate of an approved medical school, and have completed a one-year rotating or surgical internship in an approved hospital. More information and application blanks may be obtained from the Director, National Cancer Institute, Bethesda, Maryland.

AID TO PHYSICIANS

Even though cancer is on the increase, the practicing physician usually does not see more than four or five cases a year. Thus it is diffi-

cult for him to maintain familiarity with a disease that requires prompt recognition and treatment for its cure. Cooperating with medical societies, schools and hospitals in keeping physicians better informed on cancer is an essential function of a State cancer control program.

One method is through short-term refresher courses in which physicians, surgeons, radiologists, pathologists and others can obtain training in modern methods of treatment and diagnosis. Cancer control funds may be used for instruction, meeting places and travel expenses to and from such courses.

Visual materials, such as color transparencies of cancer tissue, motion pictures and pamphlets, are being developed for use by medical societies, hospitals and schools. These will make possible the dramatic presentation of up-to-date diagnostic and treatment methods to practicing physicians and allied workers.

This type of cancer instruction is also important for dentists, who have the opportunity to detect first signs of oral cancer. Dental schools and societies are given the same types of assistance as that provided for physicians.

Nurses, upon whom so large a responsibility falls in the care of cancer patients, need special training too. Separate courses for both private and public health nurses may be arranged and financed.

CLINICAL FACILITIES

The *detection center* has come to be regarded as one of our most promising safeguards against fatal cancer. In such a center, physicians and technicians cooperate to give periodic examinations to apparently well people, for the purpose of detecting cancer. An encouraging recent development is the cytologic test, which through laboratory examination of smears from body openings often reveals the presence of unsuspected internal cancer. This test is particularly successful at detecting cancer of the uterus, one of the chief causes of cancer deaths among women.

Detection centers have found cancer in one

and one half to two percent of the apparently well persons examined. Forty to 50 percent of those examined were found to have other diseases in need of treatment. Patients needing further examination or treatment are referred to their own physicians.

Since two women doctors, Elise L'Esperance in New York and Catherine Macfarland in Philadelphia, started the first cancer detection centers in 1937-38, centers have been opened in 28 States. Standards for their operation have been established by the American College of Surgeons, and so far 124 centers are in operation. Most of them are in metropolitan areas where they are operated and financed by private organizations, such as local chapters of the American Cancer Society, hospitals, medical schools, groups of physicians, and so on. Now States can use Federal funds to help existing centers and to establish new ones in areas not now served.

Unlike the cancer detection centers, which serve apparently well persons, the *diagnostic clinic* is equipped to make exhaustive examinations of persons suspected of having cancer. In most cases, these clinics are operated in conjunction with *cancer treatment clinics* and are located in general hospitals, so that specialists and laboratory facilities may be pooled for greatest efficiency.

Four hundred and seven of these clinics have been approved by the American College of Surgeons. A great many more are needed, since the goal is one clinic for every 50,000 persons. States may use Federal cancer funds to assist in their establishment and operation.

DIAGNOSIS AND TREATMENT

The demand for facilities for hospital treatment of cancer patients far exceeds the supply. There are an estimated 350,000 cancer patients in the United States, and while not all need hospitalization, the waiting lists are long. States may use Federal funds to set up and maintain additional beds and nursing service for cancer

patients, thus helping the needy obtain these services. In States where cancer control laws permit, cancer funds may also be used to provide surgery and treatment for hopeful cases, and radiation for those who cannot pay.

Another source of free radiation is the radium loaned to hospitals by the National Cancer Institute. Purchase of radium was specifically authorized by Congress in 1939. Two hundred thousand dollars bought nine and a half grams, most of which have been on loan ever since to hospitals throughout the country. In 1947, fifty institutions and hundreds of patients were using Institute radium.

The importance of periodic examination for recurrence in patients who have been treated for cancer cannot be overestimated. To see that all such cases are taken care of, a well organized follow-up program is needed in each State. Use of cancer control funds for this purpose is encouraged.

Laboratory facilities for the prompt diagnosis of suspected cancer tissue are essential. Helping to provide them is another goal of the national cancer program. States are authorized to use their grants to set up central *tissue diagnostic services* where needed, or to subsidize hospitals, medical schools, private laboratories or pathologists to provide such services.

PUBLIC EDUCATION

There are certain very important reasons for special education of the public on cancer besides the grave importance of prompt recognition and adequate treatment. The widely prevalent dread of the disease, the many fallacies and superstitions surrounding it, and the multiplicity of quack remedies all need to be fought with the truth.

In the main, public education has been carried on in the past by non-government organizations, chiefly the American Cancer Society, which has produced a large variety of leaflets, posters, films, etc. for popular instruction in cancer. Educational materials developed by Federal, State and local health agencies will supplement this work.

Cancer Organizations

AS HAS BEEN true of most other government programs for public welfare, the national cancer campaign was started after years of spade-work by non-government agencies had built up a public demand and acceptance for it. Biggest and best known private organization in the cancer field is the American Cancer Society, organized in 1913 by a group of doctors and laymen as the American Society for the Control of Cancer.

The Society's original and early contribution to the nation's fight against cancer was its educational campaign to convince the public and the medical profession that cancer could be handled if found early enough. It enthusiastically supported the government's large-scale entry into cancer research in 1937, and in 1945 added research to its own roster of activities. Of approximately $10,000,000 raised by the Society last year, $2,500,000 was allocated for research grants and fellowships. Most of this was distributed through the Committee on Growth of the National Research Council.

An organization that raises money to support research, is the Damon Runyon Cancer Fund, which solicits contributions mainly by radio and turns the money over to research groups. There are many other groups that give generously of their time and money to the big cancer drives and others that concentrate on specific problems. The American Contract Bridge League, for example, supports the fight against children's cancer. And in New York there is the National Cancer Foundation, Inc., primarily concerned with the care of advanced cancer patients.

There are in the United States a score or more of privately financed organizations interested in cancer research. A good many of them carry on research in their own laboratories. Among these are Memorial Hospital and the Sloan Kettering Research Institute in New York City, the Institute for Cancer Research in Philadelphia, the Roscoe B. Jackson Memorial Laboratory in

Bar Harbor, Maine, the Rockefeller Institute for Medical Research in New York City, the Barnard Free Skin and Cancer Hospital in St. Louis, the Roswell Park Memorial Hospital in Buffalo, the Chicago Tumor Institute in Chicago, Illinois, and the M. D. Anderson Hospital for Cancer Research in Houston, Texas.

Others make grants available for outside research. Among these are the Donner Foundation in Philadelphia, the Jane Coffin Childs Memorial Fund for Medical Research at Yale University, and the Anna Fuller Fund in New Haven. There are also a great many research projects in connection with universities and medical schools, some of them financed locally.

Many members of research groups in this country belong to the American Association for Cancer Research, which holds an annual scientific conference. There is also an international group, the *Union Internationale Contre Le Cancer*, which meets at intervals of several years. This year the *Union Internationale* and the American Association for Cancer Research jointly sponsored the Fourth International Cancer Research Congress held in St. Louis, Missouri.

The National Cancer Institute cooperates with all of these organizations. The release of atomic energy came only after many individuals from many different parts of this country—as well as many countries of the world—made research contributions. Finding the cause, and prevention or cure of cancer is a still vaster problem. The wholehearted cooperation of all individuals and organizations working in the field will lessen the time before the answer is found.

THE NATIONAL ADVISORY CANCER COUNCIL

PRESENT MEMBERS

Dr. A. C. Ivy, *Executive Director, Vice President, University of Illinois, Chicago*

Dr. Frank E. Adair, *Memorial Hospital, New York City*

Dr. Charles Huggins, *University of Chicago, Illinois*

Dr. Robert S. Stone, *University of California, San Francisco*

Dr. Shields Warren, *New England Deaconess Hospital, Boston*

Dr. Waltman Walters, *Mayo Clinic, Rochester Minnesota*

Ex-officio Chairman, Dr. Thomas Parran, *Surgeon General of the U. S. P. H. S.*

PREVIOUS MEMBERS

Dr. Arthur H. Compton, 1937 *
University of Chicago

Dr. James B. Conant, 1937
President, Harvard University

Dr. James Ewing, 1937
Director, Memorial Hospital, N. Y.

Dr. Ludvig Hektoen, 1937
McCormick Institute, Chicago

Dr. C. C. Little, 1937
Director, Jackson Memorial Laboratory

Dr. Francis C. Wood, 1937
Columbia University

Dr. James B. Murphy, 1938
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Dr. Mont R. Reid, 1938
University of Cincinnati

Dr. Max Cutler, 1939
Chicago Tumor Institute

Dr. George M. Smith, 1939
Yale University

Dr. Edward A. Doisy, 1940
St. Louis Univ. School of Medicine

Dr. Cornelius P. Rhoads, 1940
Director, Memorial Hospital, N. Y.

Dr. A. Baird Hastings, 1943
Harvard University

Dr. J. Shelton Horsley, 1944
St. Elizabeths Hospital, Richmond

Dr. Sherwood Moore, 1944
Director, Mallinckrodt Institute, St. Louis

* Dates indicate first year of appointment.

THIS FOLDER ON THE NATIONAL CANCER INSTITUTE WAS PUBLISHED BY THE HEALTH EDUCATION INSTITUTE, RALEIGH, NORTH CAROLINA, AUGUST 1947.

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